

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1, 4, 7, 9, 16, 23, 27 and 29-37 are pending in the present application. No claims are canceled, amended, or added by the present amendment. Claims 4, 7, 16, and 23 stand withdrawn in response to a previous restriction requirement.

In the outstanding Office Action, Claims 30, 33, and 36 were rejected under 35 U.S.C. § 112, first paragraph; Claims 1, 9, and 27 were rejected under 35 U.S.C. § 102(e) as anticipated by Guenter et al. (herein "Guenter"); and Claims 29-37 were rejected under 35 U.S.C. § 103(a) as unpatentable over Guenter in view of Bradski.

Applicants and applicants' representatives thank the Examiner and the Examiner's supervisor for the courtesy of an interview extended to applicants' representatives on December 30, 2003. During the interview, differences between the present invention and the applied art, and rejections noted in the outstanding Office Action were discussed. The Examiner agreed that the claims distinguished over the art of record. However, no agreement regarding allowability was reached because the Examiner felt that further searching was required. Arguments and claim amendments presented during the interview are reiterated below.

Regarding the rejection of Claims 30, 33, and 36 under 35 U.S.C. § 112, first paragraph, applicants respectfully traverse the statement in the outstanding Office Action that the claims contain subject matter which was not adequately described in the specification.¹ Applicants note that support for Claims 30, 33, and 36 is found in the originally filed specification at least at page 36, line 23, to page 37, line 2. Accordingly, it is respectfully requested that rejection be withdrawn.

¹ Office Action, mailed September 23, 2003, at page 2, § 4.

Claims 1, 9, and 27 were rejected under 35 U.S.C. § 102(e) as anticipated by Guenter. That rejection is respectfully traversed.

Claim 1 is directed to an image recognition method that includes obtaining a deformed image by three-dimensionally deforming a captured range image having three-dimensional information including depth information of an object to be sensed, and recognizing three-dimensional motion of an object in the range image by comparing the obtained three-dimensionally deformed image with a newly captured range image. Independent Claims 9 and 27 include similar features.

In a non-limiting example, Figure 12A shows a three-dimensional range image of a hand used in an image recognition method. The range image is deformed, as shown in Figures 9D and 10A, to achieve a deformed image, for example as shown in Figures 12B and 13A. Three-dimensional motion of the hand in the image is recognized by comparing the deformed image with a newly captured range image, for example as shown in Figure 13B.

As discussed during the interview, Guenter does not teach or suggest recognizing three-dimensional motion of an object by comparing a three-dimensionally deformed range image with a newly captured range image. Instead Guenter teaches a method of creating a computer animation by applying 3D markers to the face of an actor and recording video of the actor's face from multiple camera angles.² The change in location of each 3D marker is determined by comparing the location of 3D markers in subsequent video frames, and this change is replicated in a 3D computer animation face model.³ Thus, Guenter discloses comparing 3D marker locations with 3D marker locations, which is different than deforming a captured image, and comparing a deformed image with a newly captured image, as in the claimed invention. Accordingly, it is respectfully submitted that Guenter does not anticipate the claimed invention and the outstanding rejection is traversed.

² Guenter at column 5, lines 14-15.

³ Guenter at column 5, lines 28-33.

Accordingly, it is respectfully submitted independent Claims 1, 9, and 27, and each of the claims depending therefrom, are allowable.

Claims 29-37 were rejected under 35 U.S.C. § 103(a) as unpatentable over Guenter in view of Bradski. That rejection is respectfully traversed.

Claims 29-31 depend on Claim 1, Claims 32-34 depend on Claim 9, and Claims 35-37 depend on Claim 27, and as discussed above, Claims 1, 9, and 27 are believed to be allowable. Further, it is respectfully submitted Bradski also does not teach or suggest the features recited in the independent claims. Accordingly, it is respectfully requested that rejection also be withdrawn.

Consequently, in light of the above discussion, this application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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